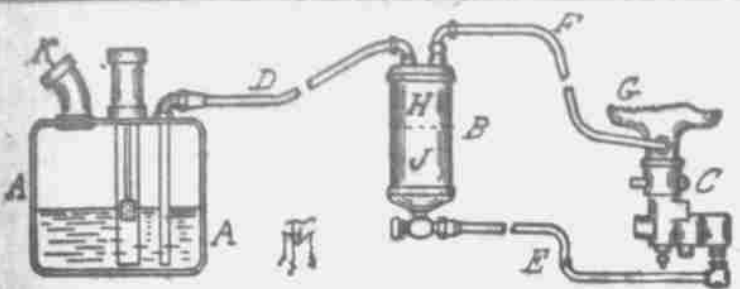


The Why and Wherefore Of The Vacuum Feed



This system seeks to eliminate the disadvantages of the ordinary gravity system, viz.: Uncertainty of gasoline flow due to up grades and the small available capacity of the elevated tank. Necessarily employed, and at the same time to do away with special pumps, the necessity for an air-tight fuel tank and the occasional necessity for the creation of the flow pressure by hand, at starting. So far as the actual delivery of gasoline to the carburetor is concerned, it is a gravity system, resembling most nearly the form of this system in which the fuel tank is located forward of the cowl board, close to the engine, where the fuel is sure to run to the carburetor, no matter what may be upward inclination of the car, within practical limits, and where the fuel is exposed to become warm enough to be readily vaporized, very soon after the car is in motion. The principle of the vacuum feed is as follows: A heavy constant level of gasoline is automatically maintained in a small auxiliary tank, placed in the hood space above the carburetor bowl, which supply is drawn from the large main fuel tank, which is usually placed between the frame members at the rear of the chassis and is fed to the carburetor bowl by simple gravity. In the accompanying diagram, A represents the rear located main tank, C the carburetor and B the auxiliary or vacuum tank elevated above the carburetor, mounted upon the front of the cowl board or fastened to the engine itself. D is the supply line from the main tank to the vacuum tank, through which the latter is filled and E is the gravity fuel supply pipe from the vacuum tank to the carburetor float-chamber. As the main tank is located below the auxiliary tank, an external force of some kind must be applied to move gasoline from the former into the latter and the force utilized is the unbalanced pressure of the atmosphere acting upon the fuel in the main tank. In the filler-cap of which there is a small air opening K, this unbalanced pressure or suction forces gasoline from the main into the auxiliary tank, just as a person draws liquid from a tumbler into his mouth through a straw, and this suction is created in the following manner: When an engine is in operation, with the throttle nearly closed, the volume of mixture which enters the intake manifold and cylinders is greater than that which enters the carburetor—the throttle valve acting to reduce the density of the fuel passing it—with the result that the gas in the intake pipe, above the throttle, is expanded and at a lower pressure than that of the atmosphere. As the throttle is opened the reduction of pressure of this gas is progressively less, but it is never quite up to atmospheric pressure. In the diagram, F is a tube leading from the upper part of vacuum tank B into the intake manifold G and when the engine is running, with partly closed throttle, full atmospheric pressure acting on the gasoline in A and pipe D overcomes the reduced pressure acting in vacuum pipe F, in tank B and fuel is forced into B. In the system under description, B is in reality a double tank, consisting of an upper compartment H and a lower compartment J, the former emptying into the latter through an automatic valve between them. The upper compartment acts as an automatic pump to keep a supply of gasoline raised from the main tank and available for the replenishment of compartment J, which later acts merely as a simple gravity supply for the carburetor. The construction and action of the tank mechanism, which accomplishes these results, will be explained later. Among the advantages of the vacuum feed system may be mentioned the following: It furnishes fuel to the carburetor at practically a constant head under all conditions. It requires no mechanical pumps, but derives its feeding power from a condition inherent in every engine while running. It keeps available for the carburetor a supply of fuel ample for starting purposes and the engine can be kept running, in an emergency, by filling the auxiliary tank by hand. It supplies the carburetor with warmed fuel very soon after the engine is started. In case the carburetor float valve leaks, when the car is not in use, the loss of fuel is confined to small quantities in the tank. The auxiliary tank acts as an additional water and sediment separator, to prevent foreign matter from entering the carburetor. The somewhat complicated mechanism within the auxiliary tank and the fact that the force available to fill it is very slight, during long periods of full throttle operation and high fuel consumption, are its chief disadvantages. (Copyrighted, International Syndicate.)

AUTOS NECESSARY FOR SMALL TOWN TRADE

From all signs of the times 1932 will witness a remarkable return to normal production in all lines of business, together with an increased demand for goods, which will keep every mill and ship busy filling orders. And as production increases there will undoubtedly come with it more intense sales solicitation to meet competition. There are small towns by the score so seldom called upon by the traveling salesman that he almost forgets what they look like between calls. Traveling by train is too uncertain—and too costly. There is only one way out—the automobile—and already many of the progressive concerns are falling in line and buying whole fleets of runabouts of good quality for their road men. Particular houses today do not favor the cheap car. A salesman using his car to make his way about from town to town cannot be efficient, unless his machine is 100 per cent efficient. It must be dependable under all conditions of climate, weather and roads. Within a comparatively short time there will be very few concerns content to allow their sales forces to pass up the business which the small town has to offer—Franklin.

Chief of Police White, of San Francisco, has saved off his shotgun. So too, have his deputies and captains and patrolmen in the traffic squad. Only three highways permit entrance or exit and on these roads there are now stations equipped with police cars and policemen and motorcycles and shotguns. As soon as an automobile theft is reported, the number of the car and whatever description is available are telephoned to each of these stations. Subsequently, any cars of the same make or same general descriptions as the one reported stolen are stopped and their occupants examined—Motor Life Magazine.

"Exide" Efficiency



Exide efficiency is amply proven in the fact that so many of the cars today leave the factory Exide equipped.

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STATIONS UP-TO-DATE

The up-to-date service station is a far more thoroughly equipped institution than its predecessor of a few years ago. The progressive improvement of the automobile has been accompanied by remarkable improvements in the storage battery service station. Where a few years back it had but few mechanical appliances with which to hasten repair work, the situation is different today.

The average service station, for illustration, is equipped with every known mechanical device for not only turning out perfect repair work, but getting this work out in a minimum of time. Time is the important factor with the motorist. The punctual service station is the one that will get the business nowadays. Knowing the truth of this, the service stations are today competing with one another by working against time on every battery job.

The average motorist is beginning to "boon up" on his storage battery. He is realizing that the little black box on his car, which has been a mystery to him, is not a perpetual generator of electrical energy, but a device which will soon go into a fit of tantrums unless given some slight attention now and then.—U. S. L.

BEATS TRAIN TIME

Recently there appeared in the newspapers throughout the country an item in the effect that the railroads propose under private management to increase passenger rates from three cents per mile to six cents per mile.

The significance of this proposed increase, so far as it relates to the sale of automobiles and especially enclosed cars is apparent. It is a well-known fact that only a very small proportion of passengers on trains travel distances of 100 miles or more. A very large proportion, probably 75 per cent, travel a distance of not more than 100 miles. It is obvious, therefore, that the automobile will more than ever before compete with the train for the short haul passenger traffic. Further, the luxurious riding comfort and the splendid sustained roadability of many enclosed cars will rapidly enhance the already widespread popularity of the enclosed type.

When one stops to consider such accomplishments as that of John Banks of Newark, N. J., a nonprofessional driver, who on Nov. 11, 1919, drove a stock car from New York City to Montreal, a distance of 293 miles, in nine hours and 53 minutes, beating the

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BESIDES the expert tire service given car and truck owners at our up-to-the-minute plant, we give our customers the quickest kind of—

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Day and Night

Not a day passes that we do not save somebody some money. This is especially true in truck tires. We apply Goodyear Solid Tires, for instance, at night—truck needn't lose a minute's running time. Have saved some truck owners money by advising use of Goodyear Big Pneumatic Cords according to conditions.

If you are having tire trouble, constant punctures, rotten luck, stop by and let us examine the tire (no matter what make.) Maybe we can tell you how to avoid this trouble—no charge—no obligation.

We want your tire business and believe we can show you why we deserve to have it.

EXPLANATION

IN ONE of our recent advertisements we stated that the automobile committee appointed by the City Commission had recommended that all automobiles and trucks owned by the City of Memphis be junked. We have since that time seen the official report of the automobile committee, which does not recommend such disposition of all the trucks but states that some of them are in good condition. We are very glad to learn that this is the case, and cheerfully make correction of the original statement.

McBee Engine & Implement Co.
10 N. FRONT ST. MEMPHIS, TENN.



Isn't This the True Mark Of Hudson Endurance?

No Stock Car Ever Equalled Its Official Records In Speed, Hill-Climbing, Acceleration, Endurance

In every performance asked of a motor Hudson official records reveal greater ability than any other car has ever shown.

They have stood for five years. They are not held by hairs' breadth, but by big, convincing margins before which argument is dumb. They prove the master type, with limits of power, speed and endurance that none has matched to this day.

Yet if they stood for only contest supremacy they would have small importance to you.

In all the years your Hudson serves you will hardly require its full capacity. You do not want 80-mile-an-hour speed. You will scarcely encounter a situation to tax its limits of power.

These Qualities Count in Every Day Service

Of course, there is pride in possession of car qualities you know are unexcelled. And this performance mastery gives innumerable advantages. For instance, you travel faster within the speed limits. That is because you are away quicker. You pick-up faster. You have power that levels hills with ease. You have smoothness that makes the long journey comfortable and free of fatigue.

But you will have far more occasion to admire Hudson's superb riding ease, its good looks and its trustworthy dependability, than its more spectacular qualities of great speed and power.

So it is chiefly as they reveal its basic principle of supremacy—the control of vibration—that the Super-Six's world famous records are important.

The exclusive Super-Six motor adds no weight or size. Yet it adds 72% to power, and 80 % to efficiency. It almost doubles endurance. It does this by converting to useful power the destructive force of vibration, which uncontrolled quickly undermines motor endurance.

That is why the Super-Six can go faster, farther, and lasts longer.

These are official proofs. All can verify them.

Endurance Gave it Mastery On the Speedway

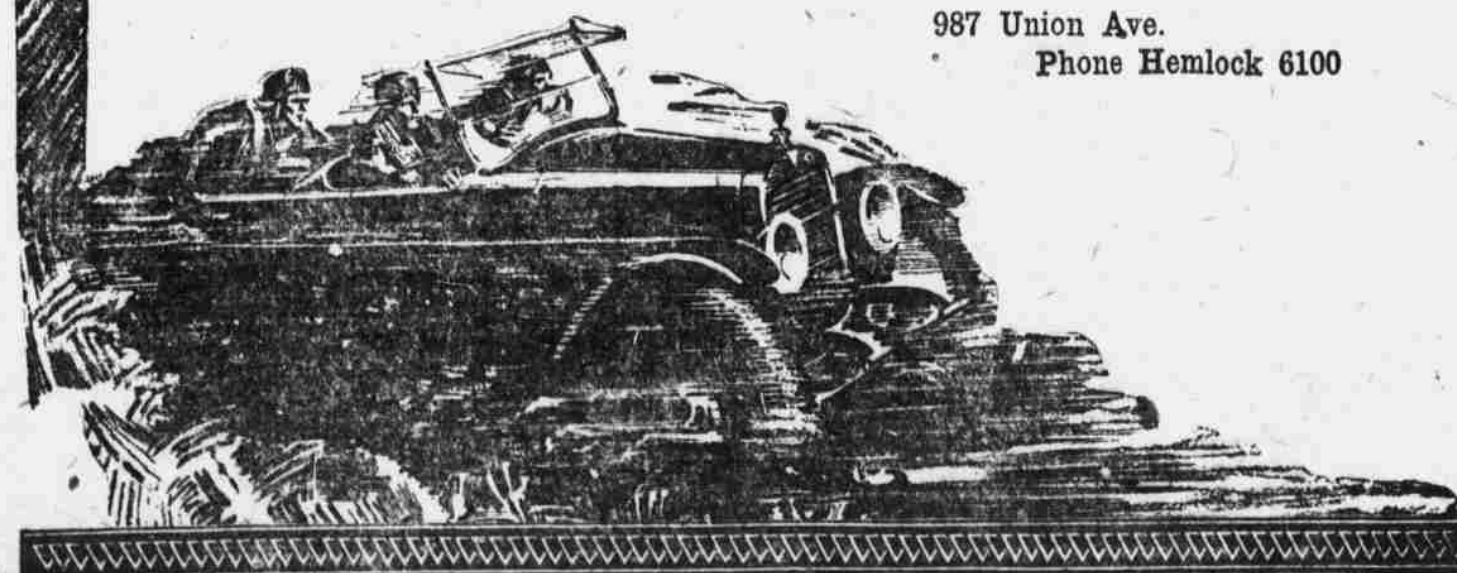
Nothing shows the dominance of the Super-Six principle more clearly than its success in high-speed racing. It was never intended for a racing car. Yet, pitted against the world's fastest cars, some of which cost as high as \$25,000, the Super-Six won, time after time, because it could maintain the terrific pace without self-destruction.

Ever since Hudson made those records it has been the largest selling fine car in the world. Each year the demand increases. By no possibility will all who want Hudson's be able to get them.

You should place your order now for your Hudson, even though delivery is not desired until summer.

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